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U. S. Environmental Protection Agency
Attn: Mr. Robert G. Thomson, P.E.
Remedial Project Manager (3HW50)
VA/WV Superfund Federal Facilities Section
Region III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

Re: Response to Comments on the Draft Work Plan for Sites 4, 21, and 22, Naval Weapons Station Yorktown, Yorktown, Virginia

Dear Mr. Thomson:

The Navy is pleased to provide responses to comments for your letter dated August 8, 1996. Baker Environmental is tentatively planning to mobilize for the field work at Sites 4, 21, and 22 during late October, 1996. Any additional concerns should be resolved as soon as possible so that the Work Plans can be finalized and the field work can commence on schedule.

If you have any questions concerning these responses to your comments on the Draft Work Plan for Sites 4, 21 and 22, please contact Mr. Richard Stryker (757) 322-4778.

Sincerely,

N. M. JOHNSON, P.E.
Head
Installation Restoration Section
(North)
Environmental Programs Branch
Environmental Quality Division
By direction of the Commander

Copy to:
VDEQ (Mr. Steve Mihalko)
WPNSTA Yorktown (Mr. Jeff Harlow, Code 09E)
Baker Environmental, Inc. (Mr. Rich Hoff)
Blind copy to:
1822 (RNS), 1822 (Admin Record)
18S, 4-21epa.rns

LANTDIV COMMENT RESPONSES ON THE DRAFT WORK PLANS FOR SITES 4,21, & 22 NAVAL WEAPONS STATION YORKTOWN YORKTOWN VIRGINIA

EPA LETTER DATED AUGUST 08, 1996

GENERAL COMMENTS

1. The number of samples and type of analyses described in the draft RI Work Plan are found to be insufficient for an adequate delineation of the extent of contamination at these sites. Site 4 is about 10 acres and Site 22 is probably larger; yet the number of subsurface sample locations proposed is only three at Site 4 and 5 at Site 22 (Tables ES-1 and ES-5). If the subsurface soils are to be adequately delineated for likely source of contamination, 15 to 20 dual-depth subsurface soil sample locations would be required at Site 4 and 20 to 25 locations would be required at Site 22. At Site 21, which is about one acre, a minimum of 3 borings should be drilled to collected subsurface soil samples.

Response

Former operations at these sites were conducted at the surface. There is no evidence of subsurface disposal activity at these sites. In addition to the proposed Round Two RI sampling program, Round One RI and Removal Action analytical results will be evaluated in this investigation. The rationale behind the proposed subsurface soil sampling locations is to evaluate the potential for contaminants to migrate from the surface through subsurface soils into groundwater. The proposed sampling scheme is sufficient for this purpose. However, due to the construction of the biocell at Site 22 for the treatability study, Baker Environmental obtained subsurface samples from the footprint of the biocell. The results of these samples will be included in the RI report. If contaminants are detected in the subsurface, additional focused (by location and analyses) subsurface soil samples may be warranted to delineate subsurface contamination in support of the Feasibility Study.

2. In addition, the type of analyses proposed for Site 4 is inadequate. Analyses for nitroaromatics were proposed only for sediment samples at the site even though these contaminants have been detected at elevated concentrations in surface water samples (Figure 2-9). It is possible that these detected nitroaromatic compounds in surface water and sediments during the past are largely attributable to either

ash that has since been removed from Site 4 or from Site 22; however, given the operation history of Site 4, it will prove prudent that selected soil samples and all surface water and groundwater samples are also collected for nitroaromatic analyses.

Response

Agreed. Nitroaromatics will be included in the sample analyses as requested.

3. A Wattera sampler may be inappropriate for volatile organics since it places a vacuum above the water sample. The action of the Wattera may increase sediment build-up in the well during purging and sampling in some cases.

Response

Wattera samplers are utilized when the static water level is below the reach of a peristaltic pump (typically 25 ft. below ground surface). The Wattera has advantages over other sampling devices in that the portions that come into contact with groundwater are disposable. This limits the potential for cross-contamination that is more likely to occur when using submersible pumps. Bailers can also increase the turbidity of the groundwater being sampled.

The point raised in this comment regarding sediment build-up is well taken. When the Wattera is utilized on this project the intake will be placed above the top of the well screen. Additionally, the Wattera will be operated at a low-flow pumping rate. These steps will reduce the potential for sediment build-up when the Wattera is required. In most instances, however, it is expected that the peristaltic pump will be utilized. The Work Plan will be revised to reflect these items.

4. The contaminants of potential concern (COPC) for sites 4, 21, and 22 (pages 3-1 to 3-2) are listed as, "...may include..." The rationale used to determine which contaminants may be of concern should be detailed in this document. In particular, the ecological risk assessment should be used to generate the list of contaminants of concern (COCs) based on ecologically sensitive guidelines. Since the aquatic ecological risk assessment has not been conducted (page 4-2), management decisions about the COCs should not be applied before the ecological risk assessment is completed.

Response

Agreed. Contaminants of Potential Concern (COPCs) and Contaminants of Concern (COCs) will be determined as part of the human health and ecological risk assessments conducted

in the Round Two RI for these sites. The Work Plan attempts to provide the reader with the "expected" COPCs based on knowledge of former site operations and results from the Round One RI and Removal Action. The text will be revised to clearly reflect this.

5. The draft Round 2 RI Work Plan did not describe details regarding sediment sampling, so it is not known how the locations were chosen. Sediment samples should be collected from depositional areas.

Response

The sediment sampling locations were chosen to evaluate conditions upstream, adjacent to, and downstream of each site. This rationale is provided on pages 4-8 and 4-9. The tidal nature of Felgates Creek makes determination of depositional areas difficult. At locations where depositional areas can be identified, the sediment sampling will be focused in those areas. Please note that in response to General Comment No. 6 three additional sediment sampling locations have been added to the marsh area immediately adjacent to Site 22.

6. Figure 4-3 indicates limited additional sediment sampling in Felgates Creek in the vicinity of these sites. There also was no data collected from the explosive burning facility (site 22) in round 1 RI sampling. The extensive wetlands located between Site 22 and Felgates Creek were not sampled in round 1 and there is no sampling proposed in this wetland in round 2. In order to determine if this wetland may be impacted by contaminants from sites 4, 21, and 22, sampling stations must be located in this wetland.

Response

Agreed. Three additional sediment sampling locations will be added to this area, along the perimeter of Site 22. A shallow (0-4") and deep (4-8") sample will be collected from each location. The Work Plan will be updated to include this.

7. Details regarding the fish sampling were not provided in the subject document, except to state that representative samples will be collected from each station. Preferably, the species of fish collected should be those which would be most susceptible to bioaccumulation of contaminants of concern present in the drainage ditch and Felgates Creek. If contaminants that biomagnify through the food chain are found to be of concern (based on the proposed sediment sampling), then fish that are higher on the food chain should be sampled. Since it is not yet clear which contaminants are of concern, we request that two types of organisms be collected: those

directly exposed to contaminants from contact with the sediment (e.g., oysters or clams), and carnivorous fish. Whole body fish analysis should be conducted and not just fillets.

Response

A fish survey will be conducted to determine the types of fish present at or near Sites 4, 21, and 22. This will involve a variety of fish-catching techniques. The fish will be sized, weighed, and observed for any gross abnormalities (i.e. visible tumors, lesions, fin-rot, etc.) Additionally, we will collect Mummichugs and hold them for further analysis. Mummichugs have a relatively small home range and may be more indicative of impacts from site conditions. Shellfish will not be collected for two primary reasons. The area immediately surrounding Sites 4, 21, and 22 is not primary habitat for shellfish. Shellfish are more abundant in the upper reaches of Felgates Creek. Although sporadic samples of shellfish may be obtainable from the study area, the value of the samples would be questionable and debatable, and add more uncertainty into the ecological risk assessment process.

SPECIFIC COMMENTS

1. Table ES-1:

Hardness analyses will not be necessary if TAL metals are analyzed in the surface water samples. It can be calculated with the sum of Ca and Mg.

Response

Agreed. Hardness will be calculated as the sum of Ca and Mg.

2. Table 2-3

According to Table 2-3 of the subject report, detection limits for cadmium in sediment were as high as 4 mg/kg, which exceeds the ERL for cadmium of 1.2 mg/kg. Likewise, detection limits for cadmium in surface water (4 µg/L) exceeded the freshwater chronic AWQC (1.1 µg/L). The targeted detection limits for cadmium should be below these screening guidelines for the Round Two RI.

Response

Although the Contract Required Detection Limit (CRDL) is above the criteria listed, the Instrument Detection Limit (IDL) for the selected method is below those criteria. Those analytes detected below the CRDL will be flagged by the data validator

as "estimated" (usually with a J). Data flagged in this manner will be considered usable and will be incorporated into the human health and ecological risk assessments in the same manner as unqualified data.

3. Figure 4-1:

Two additional surface soil samples should be collected on the north and west side of the access road to site 4 to be consistent with the surface soil sampling coverage conducted in the Round One RI. The surface soil samples collected within Site 4 should not be taken within the areas where excavation and backfill took place.

Response

There was no backfilling associated with the Removal Action. The proposed Round Two RI surface soil locations were selected to complement, not be consistent with, the Round One RI and Removal Action analytical results. The proposed and existing data set provide sufficient coverage for evaluating surface soil at Site 4.

4. Figure 4-1:

Samples 21SS19 and 21SS20 would be more appropriately considered as surface soil samples for Site 4. In addition, two surface soil samples should be placed between Sites 4 and Site 21 north (or west) of the unnamed tributary to Felgates Creek. This will help to more thoroughly assess the impact of runoff from Site 4.

Response

Agreed. The samples will be renumbered to reflect their association with Site 4. Sediment samples will be collected directly from the unnamed tributary to Felgates Creek that separates Sites 4 and 21 in lieu of additional surface soil samples (Figure 4-3).

5. Sections 3.1, 3.2, and 3.3:

Other important potential ecological receptors include wading and probing shorebirds and raptors which eat fish and terrestrial receptors.

Response

We agree that a variety of birds are potential ecological receptors related to Sites 4, 21, and 22. We will add language in Sections 3.1, 3.2, and 3.3 which states this. However, we do not intend to model uptake into these birds nor will this statement affect the number of samples or analyses

performed in the various media which we have indicated in the Draft Work Plan.

6. Sections 3.1 and 4.1:

Nitroaromatics should also be COPCs at Site 4.

Response

Please refer to the response for General Comment No. 4.

7. Page 4-2, Section 4.1:

Please note that the USEPA Region III RBC Table has been updated.

Response

Comment noted.

8. Page 4-6, Section 4.1.2.2 Well Development:

Please explain purge water "discharged on site to the well."

Response

This typographical error will be corrected. Purge water will be discharged to the ground in the vicinity of the monitoring well. The text will be revised to reflect this.

9. Page 4-10, Section 4.1.4, 3rd paragraph:

All fish samples should have a tissue analysis for COPCs, even though sediment/water samples in the location may be clean. The aerial extent of the surface water near the sites is quite small and it is reasonable to expect fish to be quite mobile among various sampling locations.

We suggest fish samples collected for ecological assessment be whole body samples, and filleted samples should be used if human health risk assessment is to be performed. For a bioaccumulation study, the gut should be taken out of the fish since it may contain sediments that would skew the evaluation of bioaccumulation in the fish tissue. In addition, nitroaromatics are also COPCs in the tissue samples and should be analyzed.

Response

The analytical program for fish sampling (number of samples and analytical parameters) will be determined based on the results of the surface water/sediment sampling. If the visceral portion of the fish is discarded without consideration of the contaminants of concern, the samples

results may be biased. For example, if PCBs were one of the ECOCs and the fish were sampled in the manner suggested, the sample may be biased low. PCBs tend to accumulate in the fatty tissue and removing the visceral portion of the fish may contribute to the removal of fatty tissue. Conversely, including the visceral portion of the fish may contribute to a high-biased sample result, if sediment in the stomach or intestines is analyzed. This is why we recommend waiting on the results of the sediment and surface water samples before deciding on how to analyze the Mummichugs.

10. Page 4-10, Section 4.1.4:

Describe the targeted species of fish and the size class for the study.

Response

The target species is Mummichug. This species is less than 3 inches in size. The text will be revised to reflect this.

11. Page 4-11, Section 4.2.1:

If leaching of contaminants into groundwater is a concern, samples for physical parameters (grain size, (sieve and hydrometer), bulk density, cation exchange capacity and permeability) should also be collected from the undisturbed zone. However, collection of these samples can be deferred until after the analytical results for soil samples indicate such a need.

Response

Agreed. An additional soil sample will be collected and analyzed for engineering parameters at Site 21.

12. Page 4-3, Section 4.1.1.2:

See general comments for the number of subsurface sample locations.

Response

Please refer to the response provided for General Comment No. 1.

13. Page 4-12, Section 4.2.1.2:

Please spell out the location where subsurface soil samples will be collected. Two additional locations should be drilled to collected subsurface soil samples. See general comments.

Response

The proposed soil boring location at Site 21 is presented on Figure 4-2. The text will be revised to indicate this. Please refer to the response to General Comment No. 1.

14. Page 4-17, Section 4.3.1.2:

See general comments for the number of subsurface soil sample locations.

Response

Please refer to the response provided for General Comment No. 1.